Literature.

London's Gardeners' Magazine for the present month is a double number, and contains, as usual, its full complement of useful matter. The article on "Comparative Physiology," by Mr. Lyndburn, still continues, and will rank high as a paper of close and analytical research. "Dunbar Castle, its Gardens, and its Gardeners," by Peter Mackenzie, is also a continued paper, and it is highly practical and instructive. We give an extract to secure the benefit of the suggestions for our student readers:—

"One evening in summer when the labours of the day were past, when the lads in the bothy had partaken of their evening meal, and had rested themselves a little, their master came among them with his measuring-chain and cross-staff, picket staves, and arrows. He soon told them that the object of his visit was to give them a few lessons in land-surveying, and, though it was upon their own time, he hoped they would give him their attendance for a few hours, for he trusted it would be to their own advantage in after-life, when they should have charges of their own. All shewed their readiness to attend their master. They went into a pasture field, where they were to commence operations, and, although some of them knew a little of land-surveying already, yet he thought it would be as well to give them a few instructions relating to the geometrical figures in which pieces of land are commonly found to be; so, instead of giving his lessons on paper, which is a common practice, he marked off with his picket staves a large square, and shewed that by multiplying the base side by the perpendicular, the number of square links, or feet, or yards, would be found. After Bauldy had understood how to find the contents of a square, he next formed a parallelogram, and shewed that the area is found by multiplying the length by the breadth. He next formed the rhombus, and directed them to multiply the base by the perpendicular height, and they would find the area: he also shewed them the difference between the rhombus, and the rhomboides from the rhombus. He proceeded to the triangle, and shewed them various ways of finding the area; first, by multiplying the base by a perpendicular demitted from the opposite angle, half the product is the area; or, by multiplying the base by half of the perpendicular, or the perpendicular by half of the base. After the triangle he formed the trapezium, and, dividing it into two equal parts by a diagonal line, and demitting perpendiculars from the other angles and multiplying the diagonals by the sum of the two perpendiculars, shewed them that half the product is equal to the area. Next in order he described the trapezoid, the regular polygon, the circle, circular ring, segment of a circle, and the ellipse.

"When they were leaving the field the attention of Bauldy appeared to be fixed upon a beautiful Lombardy poplar that was growing near the place where they were. At last he said, 'Weel, master, I hae often wondered what the hight o' that tree may be, but I dinna ken how to reach the top o't.' 'But you may soon know the height of it, Archibald, without going to the top of it,' replied his master. 'The sun has not yet set, and the shadow of the tree is very distinctly seen upon the field, so that the length of the tree's shadow may be easily known.' He knew the length of one of his picket staves, and measured its shadow and also the shadow of the Lombardy poplar; he applied the rule of three to the three given numbers, and in a few minutes he told Bauldy that the height of the tree was about 70 feet. Bauldy thanked his master for the information he had given him, and added that it was 'a braw thing to hae lair, for it made them that made a gude use o't like a different set o' folk althegither.' 'I am glad to see you, Archibald,' said the master, 'so desirous to obtain useful acquirements, and I hope the instructions you receive in the bothy will not be lost upon you.' 'My mind,' replied Bauldy, 'when I came to work with you, was something like the wild brier that ye brought frae the wood, that brought forth naething but single roses and dog-hips; but ye planted it in the garden, and ye put bud after bud upon it, and now it bears beautiful roses o' the Aurora, and the Elysian, and Isabella, and Amaranth, and Rosinella: and every lesson that I receive I try to bud it in my mind, and few o' them dies; and when I get the name of a plant frae Sandy, or a lesson in arithmetic frae Colin, or the name o' a stane or an insect frae Wattie, I try to mind them a', and I pay them back sometimes wi' a sang, or, when they hae laid aside their books for a night, I give them a tune on the fiddle, and I am glad when I can tell them something about music that they dinna ken.' 'Well, well, get on with your knowledge and your friendship,' said their master, 'and may ye all be happy! So good night with you all; I hope we shall soon meet again.'"

The third paper is by Mr. Cruikshank, gardener at Lowther Castle, and is entitled, "Notes made during a Horticultural Tour from Lowther Castle, in Cumberland, to Exeter, in Devonshire." It is written in a nice style of narrative, full of active observation and profitable comment. We could extract from this paper also most appropriately and profitably to THE BUILDER; as the hothouses, stables, riding-house, and dog-kennels of Tidworth (the seat of Thomas Ashton Smith, Esq.) are adverted to; but we will confine ourselves to one of the first-mentioned of these structures, as being a marvel in its way.

"There is a house built here of the most extraordinary dimensions, for the purpose for which it was built, that I have ever seen. It covers a quarter of an acre and eight square yards of ground; 303 feet long by 23 feet wide, with a span roof, glass ends, and front sashes nearly to the level of the ground, and it contains 14,978 feet of glass. There are large folding-doors at each end. There is a gravel walk down the centre of this house wide enough for a lady to drive her carriage and turn round at each end of the house without going out of it, or in the centre, as may be convenient. The house is heated by hot water, and fitted up with stages sloping from each side; a trellis-work is fitted up all round the front and ends, and an immense quantity of peas and strawberries are forced in it with the greatest success; as Mr. Smith told me he had green peas every day if he wanted them, from the middle of December until they came in out of doors, and strawberries from the middle of February until they were fit to gather in the open air. The stages are filled with small greenhouse plants, geraniums, cinerarias, bulbs, and other winter-flowering plants; and below the stages are grown seakale, rhubarb, asparagus, and salads of various descriptions, which afford an ample supply for the table. There are also trees budding at certain heights to suit the stages, such as cherries, plums, and apricots, the trees being planted in a border below the stage; but, as the roof is a fixture, they found they could not give the trees that rest which nature requires."

The Gardens and Scenery about Stirling, &c., are the subject of another excellent paper by the gardener at Blair Drummond; and in Article V. is described, the classical garden, designed after the manner of Mason, the poet, at Stoke Park, near Windsor. Article VI. is a paper by Mr. Loudon himself, entitled, "Hints for the Improvement of the Town of Southampton," &c. There is much in this paper to which the reader will at once subscribe; it treats of the cemetery and burial system, as it exists and is proposed for that town—on cleansing out the bay—on the sewerage—on direction of streets, laying down useful rules for general observation in this respect, and glances at the architecture of the street buildings there, which we give in extract:—

"We have seldom seen a town where so many buildings have been recently erected, and so very little taste exhibited in them. With the exception of the buildings at the railway station, and the villa of Mr. Hoare at Shirley, we really cannot refer to one as a specimen of good taste. It is true our walks have been very limited, and we have not seen the Infirmary, but we have ridden through the continuation of the High-street. There are two Banks and two warehouses that are negatively good, because they do not offend by misplaced ornament, that is, ornament placed out of the regular order in which it ought to be introduced. To shew what we mean by bad architecture and bad taste, we shall take a street of six-roomed houses, viz. Bernard-street, lately built by an individual who could be under no control as to his elevations but that of his own wishes. The street is of a very sufficient width, being of one-third more than the height of the houses. The line of frontage is ornamented with pilasters supporting a small entablature; and in each of these pilasters there is a sunk panel which is surrounded with mouldings like those of a room-door or inside window-shutter. To sink panels in pilasters and ornament these panels with mouldings is to destroy altogether the simplicity and dignity of the pilaster, and to reduce it to the rank of a mere piece of joiners' work. Before any pilasters were added to such an elevation, there ought to have been facings to the doors and windows. There is a certain gradation of architectural ornament in which alone it can be introduced with propriety. In every building, the first addition to what is merely necessary is architraves, that is, facings or finishings of some sort to the doors and windows; the second is the cornice or other termination to the walls which support the roof; and the third consists of the chimney tops. After this the expression of construction may be given to the walls by pilasters, piers, buttresses, or whatever is required for the architectural fiction that is to be adopted; for pilasters being originally square pillars of stone or wood of the full thickness of the wall, the spaces between them being filled in with materials that took no part in supporting the roof, the raising of the appearance of pilasters on the face of a stone or brick wall, in plaster or stone, is a mere fiction adopted to carry out the style. There is not, however, one architect in a score that knows his art scientifically, or can give a scientific reason for what he does."

PLAN OF A SKEW ARCH.

SIR,—In your number of THE BUILDER, Oct. 28th, there is a plan of a skew arch laid down for the working mason to work from, so as to be able from that plan to work the quoins and interior of arch. I shall not give any opinion upon Mr. Lindley's plan whatever. I offer to your notice a plain plan, shewing—First, how the development is got from the cylinder; Secondly, how the bed and end joints are got on the development; Thirdly, the arch developed, shewing how the stones lie in courses; Fourthly, shewing how the bevils are got to work the quoins, and where to apply them.

A, plan of bridge at an angle of 48 degrees. B, plan of cylinder on the square line. C, development of cylinder. D, face of arch on the skew line. E, arch developed, shewing how the arch stones lie on their beds. F, springer in arch, shewing springer notched to receive the ashlar courses. G shews the abutment and a portion of the arch. H H, face of each abutment. I is a section from *a* to *a* on the arch developed. K K are the round-faced rules for the mason to work the soffit of arch stone; the bevils 1 1 work the soffit from the bottom bed; the bevils marked 2 2 2 2 the bottom one, on the obtuse angle, will work the face of No. 1 quoin; and the bevil above will work the face of No. 4 quoin, and the bevils on the acute side will work No. 1 and No. 6. The rule L is the twisting rule, it twists at 4 feet long 3 inches, and at 8 feet long 6 inches. M shews how the twisted rule is got. N N shews how each bevil is got to work the face and soffit on each angle, the bevil 3 3 on N will work the face and soffit on No. 1 stone, or face of arch, and so on to No. 2, by shifting the bevil to the next line, and all the rest are got the same way on the same side; the bevil 8 3 on N is the bevil for No. 1 on the acute side of arch, and by shifting your bevil one line, it will give you the bevil for No. 2, and so on with the rest of the quoins. The arch must be divided on the spiral line, and the lines marked A on the development are to find the end joints and to lay down the principal in a proper manner; the lines marked *b*, above the development, and on the cylinder their inter-sections give the face line of arch on the development. The stones marked *g* are key-stones.

Sir, I fear my explanation is lengthy, and if you can make it more brief, you would oblige. I never offered any thing to the public press previous to this, and it is some four or five years since I either read any work on the subject or worked at one; therefore, I hope, if there are any defects in my sketch, some of the kind readers of THE BUILDER will put me right. G. S.

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